

WHAT IS CLAIMED IS:

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1. A temporary implant for use as an anchor in the mouth comprising:
an implant adapted to be temporarily affixed in a bone surface selected from the group consisting of the buccal, labial and lingual surfaces of the maxillary jawbone and the buccal, labial and lingual surfaces of the mandibular jawbone.
2. The implant of claim 1 wherein said implant has a securing section for releasably attaching an orthodontic appliance to said implant.
3. The implant of claim 2 further including an orthodontic appliance releasably attached to said securing section.
4. The implant of claim 3 wherein said orthodontic appliance includes a fastening section for releasably attaching said appliance to said securing section of said implant.
5. The implant of claim 1 wherein said implant includes an integrally formed orthodontic appliance.

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6. The implant of claim 3 wherein said orthodontic appliance is selected from the group consisting of a bracket, hook, ball joint, buccal tube, Herbst appliance and arch-expanding jackscrew.

5 7. The implant of claim 5 wherein said orthodontic appliance is selected from the group consisting of a bracket, hook, ball joint and buccal tube.

10 8. The implant of claim 2 wherein said implant includes an outer end adapted to be exposed outwardly from the bone, said outer end including a peripheral flange which may be grasped during attachment of an orthodontic appliance to said implant, so as to prevent rotation of said implant in the bone once said implant is temporarily positioned in the bone.

15 9. The implant of claim 1 wherein said implant includes an outer body surface which contacts the bone when said implant is temporarily affixed in a part of the maxillary or mandibular bone, said outer body surface having a surface projection adapted to form a mechanical interlock with the bone.

10. The implant of claim 2 wherein said securing section includes a longitudinal bore adapted to receive a fastening section of an orthodontic appliance, said implant further including a slot extending longitudinally from an inner end of said implant, whereby
5 insertion of the fastening section into said bore causes the diameter of at least a portion of said implant to expand, thereby securing said implant in the maxillary or mandibular bone.

11. The implant of claim 1 wherein said implant is formed of a shape-memory alloy adapted to be in a deformed position at
10 ambient mouth temperature thereby securing said implant to the maxillary or mandibular bone.

12. The implant of claim 1 wherein said implant is made of a material selected from the group consisting of titanium, a titanium
15 based alloy, a nickel-titanium based alloy, zirconium, a zirconium based alloy, a ceramic, poly L-lactate, a polyglycolic acid derivative and combinations thereof.

13. The implant of claim 12 wherein said ceramic is selected from the group consisting of aluminum oxide, titanium
20 nitride, titanium dioxide, zirconium oxide and calcium phosphate.

14. The implant of claim 1 wherein said implant has a length of from about 2 mm to about 5 mm and a diameter of from about 0.5 mm to about 3 mm.

5 15. The implant of claim 1 wherein said implant is adapted to be temporarily affixed in said bone surface at an angle of at least about 45° relative to a vertical orientation plane.

16. The implant of claim 15 wherein said angle is at least about 60° relative to the vertical orientation plane.

10 17. The implant of claim 16 wherein said angle is about 90° relative to the vertical orientation plane.

18. A method of attaching a temporary implant to a maxillary or mandibular bone, comprising the step of:

inserting at least a portion of said implant into a bone surface selected from the group consisting of the buccal, labial and lingual surfaces of the maxillary jawbone and the buccal, labial and lingual surfaces of the mandibular jawbone.

19. A method of attaching an orthodontic appliance to a maxillary or mandibular bone, comprising the steps of:

5 inserting at least a portion of an orthodontic implant into a bone surface selected from the group consisting of the buccal, labial and lingual surfaces of the maxillary jawbone and the buccal, labial and lingual surfaces of the mandibular jawbone; and

attaching an orthodontic appliance to said implant.

20. The method of claim 19 wherein said orthodontic appliance is selected from the group consisting of a bracket, hook, ball joint, buccal tube, Herbst appliance, and arch-expanding
10 jackscrew.

21. The method of claim 19 wherein said implant is inserted about 2 mm to 3 mm into the bone.

22. A temporary implant for use as an anchor in the mouth, comprising:

an implant adapted to be temporarily affixed in a bone surface selected from the group consisting of the buccal, labial, lingual and palatal surfaces of the maxillary jawbone and the buccal, labial and lingual surfaces of the mandibular jawbone.

23. The implant of claim 22 wherein said implant has a securing section for releasably attaching an orthodontic appliance to said implant.

24. The implant of claim 23 further including an orthodontic appliance releasably attached to said securing section.

25. The implant of claim 24 wherein said orthodontic appliance includes a fastening section for releasably attaching said appliance to said securing section of said implant.

26. The implant of claim 22 wherein said implant includes an integrally formed orthodontic appliance.

27. The implant of claim 24 wherein said orthodontic appliance is selected from the group consisting of a bracket, hook, ball joint, buccal tube, Herbst appliance and arch-expanding jackscrew.

5 28. The implant of claim 26 wherein said orthodontic appliance is selected from the group consisting of a bracket, hook, ball joint and buccal tube.

10 29. The implant of claim 23 wherein said implant includes an outer end adapted to be exposed outwardly from the bone, said outer end including a peripheral flange which may be grasped during attachment of an orthodontic appliance to said implant, so as to prevent rotation of said implant in the bone once said implant is temporarily positioned in the bone.

15 30. The implant of claim 22 wherein said implant includes an outer body surface which contacts the bone when said implant is temporarily affixed in a part of the maxillary or mandibular bone, said outer body surface having a surface projection adapted to form a mechanical interlock with the bone.

31. The implant of claim 23 wherein said securing section includes a longitudinal bore adapted to receive a fastening section of an orthodontic appliance, said implant further including a slot extending longitudinally from an inner end of said implant, whereby
5 insertion of the fastening section into said bore causes the diameter of at least a portion of said implant to expand, thereby securing said implant in the maxillary or mandibular bone.

32. The implant of claim 22 wherein said implant is formed of a shape-memory alloy adapted to be in a deformed position at
10 ambient mouth temperature thereby securing said implant to the maxillary or mandibular bone.

33. The implant of claim 22 wherein said implant is made of a material selected from the group consisting of titanium, a titanium based alloy, a nickel-titanium based alloy, zirconium, a zirconium based alloy, a ceramic, poly L-lactate, a polyglycolic acid derivative, and combinations thereof.

34. The implant of claim 33 wherein said ceramic is selected from the group consisting of aluminum oxide, titanium nitride, titanium dioxide, zirconium oxide and calcium phosphate.

35. The implant of claim 22 wherein said implant has a length of from about 2 mm to about 5 mm and a diameter of from about 0.5 mm to about 3 mm.

36. A temporary anchorage system for use in the mouth,
comprising:

an onplant disk or plate having a bone-facing surface
adapted to receive an osteoconductive factor, said onplant further
5 having at least one hole; and

a temporary implant adapted to extend through said
onplant hole into a bone surface selected from the group consisting
of the buccal, labial, lingual and palatal surfaces of the maxillary
jawbone and the buccal, labial and lingual surfaces of the mandibular
10 jawbone, whereby said onplant may be secured to said bone surface
and available for use substantially immediately.

37. A method of temporarily securing an onplant disk or plate to a bone surface in the mouth, comprising the steps of:

positioning a bone-facing surface of said onplant on a bone surface selected from the group consisting of the buccal, labial, lingual and palatal surfaces of the maxillary jawbone and the buccal, labial and lingual surfaces of the mandibular jawbone, said bone-facing surface having an osteoconductive factor and said onplant having a hole oriented substantially perpendicular to said bone-facing surface; and

inserting a portion of a temporary implant through said hole and into an opening in said bone surface, thereby temporarily securing said onplant to said bone surface and rendering said onplant available for use substantially immediately.